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26389 7590 10/07/2008

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EXAMINER	
JEAN GILLES, JUDE	
ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 10/07/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,931	10/06/2003	Nina Kang	MSFT123022	2914

TITLE OF INVENTION: SYSTEM AND METHODS FOR ROBUST DISCOVERY OF SERVERS AND SERVICES IN A HETEROGENEOUS ENVIRONMENT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	01/07/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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26389 7590 10/07/2008

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,931	10/06/2003	Nina Kang	MSFT123022	2914

TITLE OF INVENTION: SYSTEM AND METHODS FOR ROBUST DISCOVERY OF SERVERS AND SERVICES IN A HETEROGENEOUS ENVIRONMENT

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nonprovisional	NO	$1510	$300	$0	$1810	01/07/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
JEAN GILLES, JUDE	2143	709-224000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 890 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 890 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/679,931	KANG ET AL.	
	Examiner	Art Unit	
	JUDE J. JEAN GILLES	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *06/20/2008*.

2. ☒ The allowed claim(s) is/are *1-42*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Jude J Jean-Gilles/
Primary Examiner, Art Unit 2143

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Vladimir Raskin, reg. No. 62771, on 09/24/2008.

The application has been amended as follows:

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A system for discovering and identifying a server, the system comprising:

a network comprising at least one domain, ~~wherein~~ the at least one domain ~~comprises at least one server~~ comprising a plurality of servers; and

a communication device comprising:

a server monitoring unit operable for:

dynamically discovering ~~at least one~~ a server on the network;

monitoring ~~at least one~~ the server on the network; [[and]]

determining information associated with the monitored server, wherein the information is used to connect to the monitored server after a network failure situation;

determining if additional information associated with the monitored server is required, the additional information including data necessary to robustly connect to the monitored server or to identify the monitored server's type;

requesting the additional information from the monitored server; and

determining the monitored server's role based on the additional information received from the monitored server; and

a potential server storage unit operable for[[:]] storing the information associated with the monitored server.

2. (Currently amended) The system of claim 1, wherein the communication device further comprises:

a role inquiry storage unit adapted to store role inquiry data used to determine the role of the monitored server, wherein the role inquiry data comprises information inquiries pertaining to identification of a plurality of server types.

3. (Currently amended) The system of claim 2, wherein the potential server storage unit is further operable for receiving and storing potential server data used to identify potential servers, wherein the potential server data is received from a networking directory or from the potential server's response to the role inquiry data.

4. (Original) The system of claim 3, wherein the server monitoring unit is further operable for:

communicating with the network, the role inquiry storage unit, and the potential server storage unit,

wherein the server monitoring unit is operable for receiving the potential server data from the potential server storage unit;

determining whether the potential server data requires additional information from a potential server,

wherein the additional information comprises information to robustly connect to the potential server or to identify the server type of the potential server;

receiving role inquiry data from the role inquiry storage unit;

providing role inquiry data to the potential server;

receiving additional information from the potential server;

determining the potential server's role from the additional information; and

providing the additional information from the potential server to the potential server storage unit.

5. (Original) The system of claim 4, the server monitoring unit further adapted to receive networking data from the networking directory and provide the networking data to the potential server storage unit as potential server data, wherein networking data comprises information necessary to robustly connect to the potential server or information necessary to identify the potential server's role.

6. (Original) The system of claim 1, the system further comprising:

a network operating system unit adapted to communicate with the network and the server monitoring unit,

wherein the network operating system unit is adapted for:

receiving the potential server data and the role inquiry data from the server monitoring unit;

providing the potential server data and the role inquiry data to the potential server;

receiving the additional information from the potential server; and

providing the additional information to the server monitoring unit.

7. (Currently amended) A method for discovering a server in a network and contacting the server in a network failure situation, the method comprising:

dynamically discovering ~~at least one~~ a server on a network;

receiving a name of the ~~at least one~~ server on the network, the name being selected from a list comprising a NetBIOS name and a FQDN;

filling in contact information associated with the ~~at least one~~ server, the filling in contact information associated with the server including processing the name of the server on the network, the processing comprising:

(a) locating the server in a predetermined domain; and

(b) storing the name of the server as the contact information necessary for connecting to the server;

~~storing the contact information necessary for connecting to the at least one server;~~

determining whether the network is functioning properly; and

connecting to the ~~at least one~~ server, if the network is not functioning properly.

8. (Currently amended) The method of claim 7, wherein determining whether the network is functioning properly comprises:

determining whether a domain name service (DNS) server is available by attempting to resolve a fully qualified domain name (FQDN) associated with the ~~at least one~~ server; and

determining whether network basic input/output system (NetBIOS) traffic exists by attempting to resolve a NetBIOS name associated with the ~~at least one~~ server,

wherein the network is functioning properly if the FQDN and the NetBIOS name resolve.

9. (Currently amended) The method of claim 7, wherein dynamically discovering ~~at least one~~ a server comprises:

generating a first list of enumerated domains through domain trust discovery;

generating a second list of enumerated domains through directory partitions discovery;

determining whether at least one domain was found in the first list of enumerated domains or the second list of enumerated domains; and

generating a third list of enumerated domains through networking discovery, if no domain was found in the first list of enumerated domains or the second list of enumerated domains.

10. (Currently amended) The method of claim 9, wherein dynamically discovering ~~at least one~~ a server further comprises:

generating a first list of enumerated servers through directory object discovery for each enumerated domain;

determining whether an error occurred during the directory object discovery;

performing a first sequence if an error did not occur during the directory object discovery, the first sequence comprising:

determining whether a server was found in the first list of servers; and

generating a second list of enumerated servers through networking discovery, if no server was found in the first list of servers; and

performing a second sequence if an error occurred during the directory object discovery, the second sequence comprising:

generating a second list of enumerated servers through networking discovery.

11. (Currently amended) The method of claim 7, wherein filling in contact information associated with the ~~at least one~~ server further comprises:

receiving a server name from a user;

receiving a first domain name from the user, if the user provides the first domain name;

querying a server associated with the server name for a second domain name, wherein the server belongs to a domain identified by the second domain name;

determining whether the user provided the first domain name;

verifying the first domain name, if it is determined that the first domain name was provided by the user;

determining whether the user provided a server identifier name; and

processing the server identifier name, if the server identifier name was provided by the user.

12. (Original) The method of claim 11, wherein the method further comprises:

determining whether an error occurred when querying the server identified by the server name for a second domain name; and

terminating operation of the method if the determination is made that an error occurred.

13. (Original) The method of claim 11, wherein the server identifier name is selected from a list comprising a NetBIOS name and a FQDN.

14. (Original) The method of claim 13, wherein verifying the first domain name comprises:

determining whether the first domain name is the same as the second domain name;

using the second domain name as a designated domain name if it is determined that the first domain name and the second domain name are not the same;

using the first domain name as a designated domain name if it is determined that the first domain name and the second domain name are the same; and

marking a flag that identifies the designated domain name as not validated.

15. (Original) The method of claim 14, wherein processing the NetBIOS name or FQDN comprises:

using a network directory to search for a server identified by the NetBIOS name or the FQDN within a predetermined domain;

determining whether the server identified by the NetBIOS name or FQDN was found in the predetermined domain;

performing a first sequence if the server identified by the NetBIOS name or FQDN was not found in the predetermined domain, the first sequence comprising:

determining whether the designated domain name is validated; and

validating the designated domain name, if it is determined that the designated domain name was not validated; and

performing a second sequence if the server identified by the NetBIOS name or FQDN was found in the predetermined domain, the second sequence comprising:

storing the NetBIOS name as contact information, if the server was identified by the NetBIOS name; and

storing the FQDN as contact information, if the server was identified by the FQDN.

16. (Original) The method of claim 15, wherein validating the designated domain name comprises:

using DNS reverse lookup to find a correct name type;

determining whether DNS reverse lookup found the correct name type;

performing a third sequence if DNS reverse lookup did not find the correct name type, the third sequence comprising:

designating the NetBIOS name as contact information, if the user provided the NetBIOS name; and

designating a first label of the FQDN as contact information, if the user did not provide the NetBIOS name.

17. (Original) The method of claim 7, wherein storing the contact information necessary for connecting to the at least one server comprises:

determining a valid internet protocol (IP) address for connecting to the server;

sending an administrative network call to the server using the valid IP address;

determining whether an error occurred when sending the administrative network call to the server;

performing a first sequence if an error did not occur when sending the administrative network call to the server, the first sequence comprising:

storing the valid IP address as contact information; and

performing a second sequence if an error did occur when sending the administrative network call to the server, the second sequence comprising:

determining whether a FQDN associated with the server is valid;

storing a NetBIOS name associated with the server, if the FQDN is not valid; and

storing the FQDN associated with the server, if the FQDN is valid.

18. (Original) The method of claim 17, wherein determining whether a FQDN associated with the server is valid comprises determining whether the FQDN is non-null FQDN.

19. (Original) The method of claim 17, wherein determining a valid IP address comprises:

determining whether the server has a non-null FQDN;

determining whether the FQDN resolves properly, if the server has a non-null FQDN; and

designating an IP address retrieved from resolving the FQDN as the valid IP address, if the FQDN resolves properly.

20. (Original) The method of claim 19, wherein determining a valid IP address further comprises:

determining whether the server has a non-null NetBIOS name;

determining whether the NetBIOS name resolves properly, if the server has a non-null NetBIOS name; and

designating an IP address retrieved from resolving the NetBIOS name as the valid IP address, if the NetBIOS name resolves properly.

21. (Previously presented) The method of claim 20, wherein determining a valid EP address further comprises:

determining if there is a cached IP address associated with the server; and

designating the cached IP address as the valid IP address, if the cached EP address associated with the server exists.

22. (Currently amended) A method for identifying a server in a network, the method comprising:

designating a remote computer for determining a server role for the remote computer, the server role being defined by a functionality of the server, the server role being used to contact the server in a network failure situation, the server role including a printer server;

selecting a role inquiry from a set of role inquiries, the set of role inquiries comprising requests to determine the server role and requests to monitor the server after the server role has been determined, wherein if the server role has been determined as the printer server, the requests to monitor the server include printer ports information and spool directory information;

querying the remote computer with the role inquiry;

receiving a response to the role inquiry from the remote computer; [[and]]

attempting to determine a server role of the remote computer from the response; and

storing the determined server role.

23. (Original) The method of claim 22, wherein the method further comprises:

selecting a second role inquiry from a set of role inquiries, if the server role of the remote computer cannot be determined;

querying the remote computer with the second role inquiry;

receiving a second response to the second role inquiry from the remote computer; and

determining server role of the remote computer from the second response.

24. (Original) The method of claim 22, wherein the attempt to determine a server role of the remote computer from the response is successful.

25. (Currently amended) A computer-readable storage medium having computer-executable instructions for discovering a server in a network stored thereon, the computer-executable instructions performing steps comprising:

dynamically discovering ~~at least one~~ a server on a network;

receiving a name of the ~~at least one~~ server on the network, the name being selected from a list comprising a NetBIOS name and a FQDN;

filling in contact information associated with the ~~at least one~~ server, the filling in contact information associated with the server including processing the name of the server on the network, the filling in contact information being used to connect to the server after a network failure situation, the processing the name of the server on the network comprising:

(a) locating the server in a predetermined domain; and

(b) storing the name of the server as the contact information necessary for connecting to the server;

~~storing the contact information necessary for connecting to the at least one server;~~

determining whether the network is functioning properly; and

connecting to the ~~at least one~~ server, if the network is not functioning properly.

26. (Currently amended) The computer-readable storage medium of claim 25, wherein determining whether the network is functioning properly comprises:

determining whether a DNS server is available by attempting to resolve a FQDN associated with the at least one server; and

determining whether NetBIOS traffic exists by attempting to resolve a NetBIOS name associated with the at least one server,

wherein the network is functioning properly if the FQDN and the NetBIOS name resolve.

27. (Currently amended) The computer-readable storage medium of claim 25, wherein dynamically discovering ~~at least one~~ a server comprises:

generating a first list of enumerated domains through domain trust discovery;

generating a second list of enumerated domains through directory partitions discovery;

determining whether at least one domain was found in the first list of enumerated domains or the second list of enumerated domains; and

generating a third list of enumerated domains through networking discovery, if no domain was found in the first list of enumerated domains or the second list of enumerated domains.

28. (Currently amended) The computer-readable storage medium of claim 27, wherein dynamically discovering ~~at least one~~ a server further comprises:

generating a first list of enumerated servers through directory object discovery for each enumerated domain;

determining whether an error occurred during the directory object discovery;

performing a first sequence if an error did not occur during the directory object discovery, the first sequence comprising:

determining whether a server was found in the first list of servers; and

generating a second list of enumerated servers through networking discovery, if no server was found in the first list of servers; and

performing a second sequence if an error occurred during the directory object discovery, the second sequence comprising:

generating a second list of enumerated servers through networking discovery.

29. (Currently amended) The computer-readable storage medium of claim 25, wherein filling in contact information associated with the ~~at least one~~ server comprises:

receiving a server name from a user;

receiving a first domain name from the user, if the user provides the first domain name;

querying a server associated with the server name for a second domain name, wherein the server belongs to a domain identified by the second domain name;

determining whether the user provided the first domain name;

verifying the first domain name, if it is determined that the first domain name was provided by the user;

determining whether the user provided a server identifier name; and

processing the server identifier name, if the server identifier name was provided by the user.

30. (Currently amended) The computer-readable storage medium of claim 29, having further computer-executable instructions for performing the steps of:

determining whether an error occurred when querying the server identified by the server name for a second domain name; and

terminating operation of the method if the determination is made that an error occurred.

31. (Currently amended) The computer-readable storage medium of claim 29, wherein the server identifier name is selected from a list comprising a NetBIOS name and a FQDN.

32. (Currently amended) The computer-readable storage medium of claim 31, wherein verifying the first domain name comprises:

determining whether the first domain name is the same as the second domain name;

using the second domain name as a designated domain name if it is determined that the first domain name and the second domain name are not the same;

using the first domain name as a designated domain name if it is determined that the first domain name and the second domain name are the same; and

marking a flag that identifies the designated domain name as not validated.

33. (Currently amended) The computer-readable storage medium of claim 32, wherein processing the NetBIOS name or FQDN comprises:

using a network directory to search for a server identified by the NetBIOS name or the FQDN within a predetermined domain;

determining whether the server identified by the NetBIOS name or FQDN was found in the predetermined domain;

performing a first sequence if the server identified by the NetBIOS name or FQDN was not found in the predetermined domain, the first sequence comprising:

determining whether the designated domain name is validated; and

validating the designated domain name, if it is determined that the designated domain name was not validated; and

performing a second sequence if the server identified by the NetBIOS name or FQDN was found in the predetermined domain, the second sequence comprising:

storing the NetBIOS name as contact information, if the server was identified by the NetBIOS name; and

storing the FQDN as contact information, if the server was identified by the FQDN.

34. (Currently amended) The computer-readable storage medium of claim 33, wherein validating the designated domain name comprises:

using DNS reverse lookup to find a correct name type;

determining whether DNS reverse lookup found the correct name type;

performing a third sequence if DNS reverse lookup did not find the correct name type, the third sequence comprising:

designating the NetBIOS name as contact information, if the user provided the NetBIOS name; and

designating a first label of the FQDN as contact information, if the user did not provide the NetBIOS name.

35. (Currently amended) The computer-readable storage medium of claim 25, wherein storing the contact information necessary for connecting to the ~~at least one~~ server comprises:

determining a valid internet protocol (IP) address for connecting to the server;

sending an administrative network call to the server using the valid IP address;

determining whether an error occurred when sending the administrative network call to the server;

performing a first sequence if an error did not occur when sending the administrative network call to the server, the first sequence comprising:

storing the valid IP address as contact information; and

performing a second sequence if an error did occur when sending the administrative network call to the server, the second sequence comprising:

determining whether a FQDN associated with the server is valid;

storing a NetBIOS name associated with the server, if the FQDN is not valid; and

storing the FQDN associated with the server, if the FQDN is valid.

36. (Currently amended) The computer-readable storage medium of claim 35, wherein determining whether a FQDN associated with the server is valid comprises determining whether the FQDN is non-null FQDN.

37. (Currently amended) The computer-readable storage medium of claim 35, wherein determining a valid IP address comprises:

determining whether the server has a non-null FQDN;

determining whether the FQDN resolves properly, if the server has a non-null FQDN; and

designating an LP address retrieved from resolving the FQDN as the valid IP address, if the FQDN resolves properly.

38. (Currently amended) The computer-readable storage medium of claim 37, wherein determining a valid EP address further comprises:

determining whether the server has a non-null NetBIOS name;

determining whether the NetBIOS name resolves properly, if the server has a non-null NetBIOS name; and

designating an IP address retrieved from resolving the NetBIOS name as the valid IP address, if the NetBIOS name resolves properly.

39. (Currently amended) The computer-readable storage medium of claim 38, wherein determining a valid IP address further comprises:

determining if there is a cached IP address associated with the server; and

designating the cached IP address as the valid IP address, if the cached IP address associated with the server exists.

40. (Currently amended) A computer-readable storage medium having computer-executable instructions for identifying a server in a network stored thereon, the computer-executable instructions performing steps comprising:

designating a remote computer for determining a server role for the remote computer, the server role being defined by a functionality of the server, the server role including a printer server;

selecting a role inquiry from a set of role inquiries, the set of role inquiries comprising requests to determine the server role and requests to monitor the server after the server role has been determined, wherein if the server role has been determined as the printer server, the requests to monitor the server include printer ports information and spool directory information;

querying the remote computer with the role inquiry;

receiving a response to the role inquiry from the remote computer; [[and]]

attempting to determine a server role of the remote computer from the response; and

storing the determined server role.

41. (Currently amended) The computer-readable storage medium of claim 40, wherein the method further comprises:

selecting a second role inquiry from a set of role inquiries, if the server role of the remote computer cannot be determined;

querying the remote computer with the second role inquiry;

receiving a second response to the second role inquiry from the remote computer; and

determining server role of the remote computer from the second response.

42. (Currently amended) The computer-readable storage medium of claim 40, wherein the attempt to determine a server role of the remote computer from the response is successful.

Conclusion

2. Any inquiry concerning this communication or earlier communications from examiner should be directed to Jude Jean-Gilles whose telephone number is (571) 272-3914. The examiner can normally be reached on Monday-Thursday and every other Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia Dollinger, can be reached on (571) 272-4170. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3301.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-0800.

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/Jude J Jean-Gilles/

Primary Examiner, Art Unit 2143

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